Appl. No.: 10/776,653
Amdt. dated 11/23/2004
Reply to Office action of August 23, 2004

Amendments to the Claims:

1. **(Previously Presented)** A conveying apparatus for evaluating a plurality of parcels being conveyed thereon, said plurality of parcels having differing lengths, said plurality of parcels including a parcel, said apparatus comprising:

A) a first conveyor defining a first conveying surface and including an exit location, said first conveyor having a first conveyor portion which includes a crest located adjacent the exit location;

B) a first sensor configured for sensing the presence of a first parcel portion of said parcel while said parcel is on said first conveying surface, said first sensor configured to provide a first sensor signal when said first parcel portion moves out of the sensing range of said first sensor due either to tilting of said parcel over said crest, or alternatively due to movement of said parcel along said first conveyor portion without tilting, said first sensor being a first distance from said exit location;

C) a second sensor configured for sensing the presence of a second parcel portion of said parcel while said parcel is on said first conveying surface, said second sensor configured to provide a second sensor signal when said second parcel portion moves out of the sensing range of said second sensor due either to tilting of said parcel over said crest, or alternatively due ~~either~~ to movement of said parcel along said first conveyor portion without tilting, said second sensor being a second distance from said exit location, said second distance being less than said first distance; and

D) a signal processing device for receiving said first and second signals and for determining for each of said parcels if one of two conditions is met:

1) a first condition in which said first and second sensor signals are generated within a predetermined time; or

2) a second condition in which said first and second sensor signals are not generated within said predetermined time, said signal processing device providing a different output regarding parcel length depending on whether said first or second condition is met, whereby said output is based on an assumption that a parcel is tilting under said first condition.

2. (Previously Presented) The apparatus as claimed in Claim 1, wherein parcel length is estimated to be longer than a predetermined length if a parcel satisfies said first condition and parcel length is estimated to be shorter than a predetermined length if a parcel satisfies said second condition.

3. **(Previously Presented)** A conveying apparatus for evaluating a plurality of parcels being conveyed along a conveying path, said plurality of parcels having differing lengths, but each including a first and a second parcel portion said conveying apparatus particularly configured to evaluate tilting characteristics of said parcels as they are conveyed along said conveying path, said conveying apparatus comprising:

A) a conveyor assembly itself including:

1) a first conveyor portion along said conveying path for conveying parcels thereon without tilting; and

2) a crest portion along said conveying path and positioned proximate the end of said first conveyor portion, said crest portion configured such that parcels passing over said crest portion tilt over said crest portion and away from said first conveyor portion;

B) a first sensor positioned a first distance from said crest and having a sensing range, said first sensor configured to provide a first sensor signal when a first parcel portion of a given parcel moves out of said sensing range of said first sensor due either to tilting of said parcel over said crest, or alternatively due to movement of said parcel along said first conveyor portion without tilting;

C) a second sensor positioned a second distance from said crest said second distance less than said first distance, said second sensor having a sensing range and configured to provide a second sensor signal when a second parcel portion of a given parcel moves out of said sensing range of said second sensor due either to tilting of said parcel over said crest, or alternately due to movement of said parcel along said first conveyor portion without tilting; and

D) a signal processing device for receiving said first and second sensor signals and for determining if one of the following two conditions is met for a given parcel:

1) a first condition in which said first and second sensor signals are generated within a predetermined time period, upon which said signal processing device assumes said parcel is tilting out of the range of both said first and second sensors at the same time; or

2) a second condition in which said first and second signals are not generated within a predetermined time period, whereupon said signal processing device assumes said parcel has passed said first sensor and is only tilting out of the range of said second sensor,

said signal processing device further estimating the length of said parcels based on whether a given parcel satisfies said first or said second condition.

4. **(Previously Presented)** The apparatus as claimed in Claim 3, wherein said signal processing device estimates parcel length to be longer than a given predetermined length if a parcel satisfies said first condition and wherein parcel length is estimated to be shorter than a given predetermined length if a parcel satisfies said second condition, and

wherein said signal processing device further makes a tilting evaluation based upon the determination of said first or second condition, said tilting evaluation for purposes of accuracy using said first sensor signal under said first condition, and said tilting evaluation using said second signal under said second condition.

5. **(Previously Presented)** A conveying apparatus for evaluating a plurality of parcels being conveyed along a conveying path, said plurality of parcels having differing lengths, but each including a first and a second parcel portion said conveying apparatus particularly configured to evaluate tilting characteristics of said parcels as they are conveyed along said conveying path, said conveying apparatus comprising:

A) a conveyor assembly itself including:

1) a first conveyor portion along said conveying path for conveying parcels thereon without tilting; and

2) a crest portion along said conveying path and positioned proximate the end of said first conveyor portion, said crest portion configured such that parcels passing over said crest portion tilt over said crest portion and away from said first conveyor portion;

B) a first sensor positioned a first distance from said crest and having a sensing range, said first sensor configured to provide a first sensor signal when a first parcel portion of a given parcel moves out of said sensing range of said first sensor due either to tilting of said parcel over said crest, or alternatively due to movement of said parcel along said first conveyor portion without tilting;

C) a second sensor positioned a second distance from said crest said second distance less than said first distance, said second sensor having a sensing range and configured to provide a second sensor signal when a second parcel portion of a given parcel moves out of said sensing range of said second sensor due either to tilting of said parcel over said crest, or alternately due to movement of said parcel along said first conveyor portion without tilting; and

D) a signal processing device for receiving said first and second sensor signals and for determining if one of the following two conditions is met for a given parcel:

1) a first condition in which said first and second sensor signals are generated within a predetermined time period, upon which said signal processing device assumes said parcel is tilting out of the range of both said first and second sensors at the same time; or

2) a second condition in which said first and second signals are not generated within a predetermined time period, whereupon said signal processing device assumes said parcel has passed said first sensor and is only tilting out of the range of said second sensor,

said signal processing device estimating the length of said parcel based on signals from at least one of said first and second sensors, and

said signal processing device further making a tilting evaluation based upon the determination of said first or second condition, said tilting evaluation for purposes of accuracy using said first sensor signal under said first condition, and said tilting evaluation using said second signal under said second condition.

6. **(Previously Presented)** The conveying apparatus as claimed in Claim 5, further comprising means for providing a signal to said signal processing means corresponding to the distance said parcel has passed over said crest at the point said parcel begins tilting, for purposes of gravity center estimation.

7. **(Previously Presented)** The conveying apparatus as claimed in Claim 6, wherein a curtain sensor is used to sense when said parcel has passed over said crest.

8. **(Previously Presented)** The conveying apparatus as claimed in Claim 5, wherein said first conveyor portion is a belt conveyor, and wherein said crest portion is a tilting roller.

9. **(Previously Presented)** The conveying apparatus as claimed in Claim 5, wherein said first conveyor portion is a belt conveyor, and wherein said crest portion is the downstream end of said belt conveyor.

10. **(Previously Presented)** A method for evaluating the tilting characteristics of parcels being conveyed along a conveying path, said parcels having different lengths, said method comprising the steps of:

A) providing a conveyor assembly itself comprising:

1) a first conveyor portion along said conveying path for conveying parcels thereon without tilting; and

2) a crest portion along said conveying path and positioned proximate the end of said first conveyor portion, said crest portion configured such that parcels passing over said crest portion tilt over said crest portion and away from said first conveyor portion;

B) placing a first sensor a first distance from said crest, said first sensor having a sensing range and configured to provide a first sensor signal when a first parcel portion of a given parcel moves out of the sensing range of said first sensor due either to tilting of said parcel over said crest, or alternately due to movement of said parcel along said first conveyor portion without tilting;

C) placing a second sensor a second distance from said crest, said second distance being less than said first distance, said second sensor having a sensing range and configured to provide a second sensor signal when a second parcel portion of a given parcel moves out of the sensing range of said second sensor due either to tilting of said parcel over said crest, or alternately due to movement of said parcel along said first conveyor portion without tilting;

D) determining if either of the following conditions are met for a given parcel:

1) a first condition in which parcel tilting begins while said parcel is still being sensed by both said first and second sensors; or

2) a second condition in which parcel tilting begins after said parcel has passed said first sensor and is out of the range of said first sensor, but said parcel is still being sensed by said second sensor; and

E) performing a tilting evaluation based upon the determination of said first or second condition, said tilting evaluation for purposes of accuracy using said first sensor signal under said first condition, and said tilting evaluation using said second signal under said second condition; and

F) estimating parcel length for said parcels based on a signal from at least one of said first and second sensors.

11. **(Currently Amended)** A method of evaluating the physical characteristics of parcels being conveyed along a conveying path, said method comprising the steps of:

A) defining a flexibility standard distinguishing more flexible parcels from less flexible parcels;

B) positioning a plurality of sensors proximate a portion of said conveying path, said sensors positioned such that if ~~at least two of said sensors~~ they can all sense a portion of a given parcel at the same time said parcel passes along said conveying path portion, said parcel is considered more flexible under said flexibility standard, but if all said sensors cannot sense a portion of a given parcel at the same time said parcel passes along said conveying path portion, said parcel is considered less flexible under said flexibility standard;

C) conveying a parcel along said conveying path portion while sensing said parcel with said plurality of sensors; and

D) based upon the sensation of said parcel by said ~~two~~ sensors in step "C", making a determination of whether said parcel is more flexible or less flexible under said flexibility standard, and

E) based upon the sensation of said parcel by at least one of said sensors in step "C", making a tilting determination for a less flexible parcel.

12. **(Previously Presented)** The method as claimed in Claim 11, wherein in step "B", a crest is included along said conveying path portion, said crest causing inflexible parcels to tilt, while flexible parcels flex over said crest and wherein at least one of said plurality of sensors is positioned on one side of said crest.

13. **(Previously Presented)** A method of evaluating the flexibility of each of a plurality of parcels being conveyed along a conveying path, said phurality of parcels including more flexible and less flexible parcels being correspondingly more and less flexible than a predetermined parcel flexibility, said method comprising the steps of:

A) providing a first conveyor assembly along said conveying path, sai d first conveyor assembly defining a first supporting surface plane and including a crest at its downstream end along said conveying path;

B) providing a second conveyor assembly along said conveying path and downstream of said first conveyor assembly to allow passage of parcels from said first to said second conveyor assembly, said second conveyor assembly defining a second supporting surface plane being at an angle relative to said first supporting surface plane such that less flexible parcels tend to tilt as a unit but not to deform when passed from said first conveyor assembly to said second conveyor assembly, but such that more flexible parcels tend not to tilt as a unit but to deform over said crest when passed from said first conveyor to said second conveyor;

C) positioning a first sensor proximate said first supporting surface plane and positioning a second sensor on the opposite side of said crest and proximate said second supporting surface plane, said sensors being positioned such that a more flexible parcel of sufficient length will flex while passing over said crest and trigger both sensors, whereas a less flexible parcel will trigger only one sensor at a time while passing along said conveying path; and

D) conveying parcels along said conveying path and making distinctions between more flexible and less flexible parcels based on the output of said first and second sensors, and making tilting evaluations of less flexible parcels based on the output of at least one of said first and second sensors.

14. **(Previously Presented)** The method of Claim 13, wherein said distinction in Step D comprises assignment of a predetermined gravity center location if a more flexible parcel is recognized.

15. **(Previously Presented)** The method of Claim 13, wherein Step A includes providing said first conveying assembly with a tilting roller to form said crest.

16. **(Previously Presented)** A conveying apparatus for evaluating the flexibility of each of a plurality of parcels being conveyed along a conveying path, said plurality of parcels including more flexible and less flexible parcels being correspondingly more and less flexible than a predetermined parcel flexibility, said apparatus comprising:

A) a first conveyor assembly along said conveying path, said first conveyor assembly defining a first supporting surface plane and including a crest at its downstream end along said conveying path;

B) a second conveyor assembly along said conveying path and downstream of said first conveyor assembly to allow passage of parcels from said first to said second conveyor assembly, said second conveyor assembly defining a second supporting surface plane being at an angle relative to said first supporting surface plane such that less flexible parcels tend to tilt as a unit but not to deform when passed from said first conveyor assembly to said second conveyor assembly, but such that more flexible parcels tend not to tilt as a unit but to deform over said crest when passed from said first conveyor to said second conveyor;

C) a pair of sensors, comprising a first sensor proximate said first supporting surface plane and a second sensor on the opposite side of said crest and proximate said second supporting surface plane, said sensors being positioned such that a more flexible parcel of sufficient length will flex while passing over said crest and trigger both sensors, whereas a less flexible parcel will trigger only one sensor at a time while passing along said conveying path; and

D) a processing device for making distinctions between more flexible and less flexible parcels based on the output of said first and second sensors while said parcels are being conveyed along said path, said processing device also making tilting evaluations of less flexible parcels based on the output of at least one of said first and second sensors.

17. **(Previously Presented)** A method of conveying and evaluating a plurality of parcels having different physical characteristics, said plurality of parcels including more and less flexible parcels being correspondingly more and less flexible than a predetermined parcel flexibility, said method comprising the steps of:

making a determination that each of said parcels is a more or a less flexible parcel;

making a tilting determination if a parcel is a less flexible parcel;

assigning a gravity center characteristic to each of said parcels according to a first or a second criteria, depending on whether said parcel is observed to be more or less flexible, respectively, such that a more flexible parcel is assigned a gravity center characteristic according to a first criteria, and such that a less flexible parcel is assigned a gravity center characteristic according to a second criteria, said second criteria at least partially dependent upon said tilting determination;

conveying said plurality of parcels along a conveying path; and

ejecting all of said parcels from said conveying path, with consideration given to the assigned gravity center characteristic when determining where to contact said parcels for ejection thereof.

18. **(Previously Presented)** The method as claimed in claim 17, wherein said first criteria assigned to said more flexible parcels relates to a predetermined, constant gravity center characteristic.

19. **(Previously Presented)** The method as claimed in claim 17, wherein said second criteria assigned to said more flexible parcels relates to the use of a measured gravity center characteristic associated with tilting.

20. **(Previously Presented)** The method as claimed in Claim 17, wherein said first criteria assigned to said more flexible parcels relates to the use of a predetermined, constant gravity center characteristic in that the gravity center is assumed to be located at a distance from the leading edge of the parcel which is 40 percent of the total parcel length.

21. **(Previously Presented)** A method of conveying and evaluating a plurality of parcels having different physical characteristics, said plurality of parcels including shorter and longer parcels being correspondingly shorter and longer than a predetermined length, said method comprising the steps of:

making a determination that each of said parcels is a longer or a shorter parcel by a tilting evaluation;

assigning a gravity center characteristic to each of said parcels according to a first or a second criteria, depending on whether said parcel is observed to be shorter or longer, respectively, such that a longer parcel is assigned a gravity center characteristic according to a first criteria derived from said tilting evaluation, and such that a shorter parcel is assigned a gravity center characteristic according to a second criteria; and

ejecting all of said parcels from said conveying path, with consideration given to the assigned gravity center when determining where to contact said parcels for ejection thereof.

22. **(Previously Presented)** A conveying apparatus for evaluating the tilting characteristics of a parcel as it is conveyed along a conveying path, said apparatus comprising:

a first conveyor including an exit end, said first conveyor configured to convey parcels off of said first conveyor at a location proximate said exit end;

a second conveyor including an inlet end, said second conveyor configured to accept parcels onto said second conveyor at a location proximate said inlet end, said inlet end of said second conveyor and said first conveyor defining a gap therebetween;

a tilt roller positioned within said gap, said tilting roller configured such that said parcel rolls over and tilts over said tilting roller as said parcel is conveyed from said first conveyor towards said second conveyor, with said parcel tilting from a position in contact with said first conveyor and said tilting roller to a position in contact with said second conveyor and said tilting roller; and

at least one sensor to sense the tilting of said parcel as said parcel tilts over said tilting roller, said sensor providing a sensor output signal; and

a signal processing device to make a tilting evaluation based at least in part on said sensor output signal.

23. **(Previously Presented)** The conveying apparatus as claimed in Claim 22, wherein said tilting roller is an idler roller.

24. **(Previously Presented)** A conveying apparatus for evaluating a plurality of items being conveyed thereon, said plurality of items having differing lengths, said plurality of items including a item, said apparatus comprising:

A) a first conveyor defining a first conveying surface and including an exit location, said first conveyor having a first conveyor portion which includes a crest located adjacent the exit location;

B) a first sensor configured for sensing the presence of a first item portion of said item while said item is on said conveying surface, said first sensor configured to provide a first sensor signal when said first item portion moves out of the sensing range of said first sensor due either to tilting of said item over said crest, or alternatively due to movement of said item along said first conveyor portion without tilting, said first sensor being a first distance from said exit location;

C) a second sensor configured for sensing the presence of a second item portion of said item while said item is on said conveying surface, said second sensor configured to provide a second sensor signal when said second item portion moves out of the sensing range of said second sensor due to tilting of said item over said crest, or alternatively due either to movement of said item along said first conveyor portion without tilting, said second sensor being a second distance from said exit location, said second distance being less than said first distance; and

D) a signal processing device for receiving said first and second signals and for determining for each of said items if one of two conditions is met:

1) a first condition in which said first and second sensor signals are generated within a predetermined time;

2) a second condition in which said first and second sensor signals are not generated within said predetermined time, said signal processing device providing a different output regarding item length depending on whether said first or second condition is met, whereby a tilting evaluation is also based upon the determination of said first or second condition.

25. **(Previously Presented)** The apparatus as claimed in Claim 24, wherein item length is estimated to be longer than a predetermined length if a item satisfies said first condition and item length is estimated to be shorter than a predetermined length if a item satisfies said second condition.

26. **(Previously Presented)** A conveying method of evaluating a plurality of items having different physical lengths, said method comprising the steps of:

A) providing a conveyor having a conveying path which includes a crest portion over which said plurality of items may be individually tilted from a first, nontilted, position to a second, tilted, position while being conveyed along said path;

B) providing a first sensor proximate said conveying path and positioned a first distance relative to said crest;

C) providing a second sensor proximate said conveying path and positioned a second distance relative to said crest, said second distance being less than said first distance;

D) conveying said plurality of items along said conveying path such that each item tilts over said crest;

E) determining for each of the items if one of the following two conditions has been met:

1) a first condition in which item tilting begins while said item is still being sensed by both said first and second sensors; or

2) a second condition in which item tilting is done after said item has passed out of the range of said first sensor but while still being sensed by said second sensor,

F) estimating item length for each of said items based on whether said item satisfies said first or said second condition.

27. **(Previously Presented)** The method as claimed in Claim 26, wherein item length is estimated to be longer than a given predetermined length if a item satisfies said first condition and wherein item length is estimated to be shorter than a given predetermined length if a item satisfies said second condition.

28. **(Previously Presented)** A conveying apparatus for evaluating a plurality of items being conveyed along a conveying path, said plurality of items having differing lengths, but each including a first and a second item portion said conveying apparatus particularly configured to evaluate tilting characteristics of said items as they are conveyed along said conveying path, said conveying apparatus comprising:

A) a conveyor assembly itself including:

1) a first conveyor portion along said conveying path for conveying items thereon without tilting; and

2) a crest portion along said conveying path and positioned proximate the end of said first conveyor portion, said crest portion configured such that items passing over said crest portion tilt over said crest portion and away from said first conveyor portion;

B) a first sensor positioned a first distance from said crest and having a sensing range, said first sensor configured to provide a first sensor signal when a first item portion of a given item moves out of said sensing range of said first sensor due either to tilting of said item over said crest, or alternatively due to movement of said item along said first conveyor portion without tilting;

C) a second sensor positioned a second distance from said crest said second distance less than said first distance, said second sensor having a sensing range and configured to provide a second sensor signal when a second item portion of a given item moves out of said sensing range of said second sensor due either to tilting of said item over said crest, or alternately due to movement of said item along said first conveyor portion without tilting; and

D) a signal processing device for receiving said first and second sensor signals and for determining if one of the following two conditions is met for a given item:

1) a first condition in which said first and second sensor signals are generated within a predetermined time period, upon which said signal processing device assumes said item is tilting out of the range of both said first and second sensors at the same time; or

2) a second condition in which said first and second signals are not generated within a predetermined time period, whereupon said signal processing device assumes said item has passed said first sensor and is only tilting out of the range of said second sensor,

said signal processing device further making a tilting evaluation based upon the determination of said first or second condition, said tilting evaluation for purposes of accuracy using said first sensor signal under said first condition, and said tilting evaluation using said second signal under said second condition.

29. **(Previously Presented)** The conveying apparatus as claimed in Claim 28, further comprising means for providing a signal to said signal processing means corresponding to the distance said item has passed over said crest at the point said item begins tilting, for purposes of gravity center estimation.

30. **(Previously Presented)** The conveying apparatus as claimed in Claim 29, wherein a curtain sensor is used to sense when said item has passed over said crest.

31. **(Previously Presented)** The conveying apparatus as claimed in Claim 30, wherein said first conveyor portion is a belt conveyor, and wherein said crest portion is a tilting roller.

32. **(Previously Presented)** The conveying apparatus as claimed in Claim 30, wherein said first conveyor portion is a belt conveyor, and wherein said crest portion is the downstream end of said belt conveyor.

33. **(Previously Presented)** A method for evaluating the tilting characteristics of items being conveyed along a conveying path, said items having different lengths, said method comprising the steps of:

A) providing a conveyor assembly itself comprising:

1) a first conveyor portion along said conveying path for conveying items thereon without tilting; and

2) a crest portion along said conveying path and positioned proximate the end of said first conveyor portion, said crest portion configured such that items passing over said crest portion tilt over said crest portion and away from said first conveyor portion;

B) placing a first sensor a first distance from said crest, said first sensor having a sensing range and configured to provide a first sensor signal when a first item portion of a given item moves out of the sensing range of said first sensor due either to tilting of said item over said crest, or alternately due to movement of said item along said first conveyor portion without tilting;

C) placing a second sensor a second distance from said crest, said second distance being less than said first distance, said second sensor having a sensing range and configured to provide a second sensor signal when a second item portion of a given item moves out of the sensing range of said second sensor due either to tilting of said item over said crest, or alternately due to movement of said item along said first conveyor portion without tilting;

D) determining if either of the following conditions are met for a given item:

1) a first condition in which item tilting begins while said item is still being sensed by both said first and second sensors; or

2) a second condition in which item tilting begins after said item has passed said first sensor and is out of the range of said first sensor, but said item is still being sensed by said second sensor; and

E) performing a tilting evaluation based upon the determination of said first or second condition, said tilting evaluation for purposes of accuracy using said first sensor signal under said first condition, and said tilting evaluation using said second signal under said second condition.

34. **(Previously Presented)** A method of evaluating the physical characteristics of items being conveyed along a conveying path, said method comprising the steps of:

A) defining a flexibility standard distinguishing more flexible items from less flexible items;

B) positioning a plurality of sensors proximate a portion of said conveying path, said sensors positioned such that if they can all sense a portion of a given item at the same time said item passes along said conveying path portion, said item is considered more flexible under said flexibility standard, but if all said sensors cannot sense a portion of a given item at the same time said item passes along said conveying path portion, said item is considered less flexible under said flexibility standard;

C) conveying a item along said conveying path portion while sensing said item with said plurality of sensors; and

D) based upon the sensation of said item by said sensors in step "C", making a determination of whether said item is more flexible or less flexible under said flexibility standard.

35. **(Previously Presented)** The method as claimed in Claim 34, wherein in step "B", a crest is included along said conveying path portion, said crest causing inflexible items to tilt, while flexible items flex over said crest and wherein at least one of said plurality of sensors is positioned on one side of said crest.

36. **(Previously Presented)** A method of evaluating the flexibility of each of a plurality of items being conveyed along a conveying path, said plurality of items including more flexible and less flexible items being correspondingly more and less flexible than a predetermined item flexibility, said method comprising the steps of:

A) providing a first conveyor assembly along said conveying path, sai d first conveyor assembly defining a first supporting surface plane and including a crest at its downstream end along said conveying path;

B) providing a second conveyor assembly along said conveying path and downstream of said first conveyor assembly to allow passage of items from said first to said second conveyor assembly, said second conveyor assembly defining a second supporting surface plane being at an angle relative to said first supporting surface plane such that less flexible items tend to tilt as a unit but not to deform when passed from said first conveyor assembly to said second conveyor assembly, but such that more flexible items tend not to tilt as a unit but to deform over said crest when passed from said first conveyor to said second conveyor;

C) positioning a first sensor proximate said first supporting surface plane and positioning a second sensor on the opposite side of said crest and proximate said second supporting surface plane, said sensors being positioned such that a more flexible item of sufficient length will flex while passing over said crest and trigger both sensors, whereas a less flexible item will trigger only one sensor at a time while passing along said conveying path; and

D) conveying items along said conveying path and making distinctions between more flexible and less flexible items based on the output of said first and second sensors.

37. **(Previously Presented)** The method of Claim 36, wherein said distinction in Step D comprises assignment of a predetermined gravity center location if a more flexible item is recognized.

38. **(Previously Presented)** The method of Claim 36, wherein Step A includes providing said first conveying assembly with a tilting roller to form said crest.

39. **(Previously Presented)** A conveying apparatus for evaluating the flexibility of each of a plurality of items being conveyed along a conveying path, said plurality of items including more flexible and less flexible items being correspondingly more and less flexible than a predetermined item flexibility, said apparatus comprising:

A) a first conveyor assembly along said conveying path, said first conveyor assembly defining a first supporting surface plane and including a crest at its downstream end along said conveying path;

B) a second conveyor assembly along said conveying path and downstream of said first conveyor assembly to allow passage of items from said first to said second conveyor assembly, said second conveyor assembly defining a second supporting surface plane being at an angle relative to said first supporting surface plane such that less flexible items tend to tilt as a unit but not to deform when passed from said first conveyor assembly to said second conveyor assembly, but such that more flexible items tend not to tilt as a unit but to deform over said crest when passed from said first conveyor to said second conveyor;

C) a pair of sensors, comprising a first sensor proximate said first supporting surface plane and a second sensor on the opposite side of said crest and proximate said second supporting surface plane, said sensors being positioned such that a more flexible item of sufficient length will flex while passing over said crest and trigger both sensors, whereas a less flexible item will trigger only one sensor at a time while passing along said conveying path; and

D) a processing device for making distinctions between more flexible and less flexible items based on the output of said first and second sensors while said items are being conveyed along said path.

40. **(Previously Presented)** A method of conveying and evaluating a plurality of items having different physical characteristics, said plurality of items including more and less flexible items being correspondingly more and less flexible than a predetermined item flexibility, said method comprising the steps of:

making a determination that each of said items is a more or a less flexible item;

assigning a gravity center characteristic to each of said items according to a first or a second criteria, depending on whether said item is observed to be more or less flexible, respectively, such that a more flexible item is assigned a gravity center characteristic according to a first criteria, and such that a less flexible item is assigned a gravity center characteristic according to a second criteria;

conveying said plurality of items along a conveying path; and

ejecting all of said items from said conveying path, with consideration given to the assigned gravity center characteristic when determining where to contact said items for ejection thereof.

41. **(Previously Presented)** The method as claimed in claim 40, wherein said first criteria assigned to said more flexible items relates to a predetermined, constant gravity center characteristic.

42. **(Previously Presented)** The method as claimed in claim 40, wherein said second criteria assigned to said more flexible items relates to the use of a measured gravity center characteristic.

43. **(Previously Presented)** The method as claimed in Claim 40, wherein said first criteria assigned to said more flexible items relates to the use of a predetermined, constant gravity center characteristic in that the gravity center is assumed to be located at a distance from the leading edge of the item which is 40 percent of the total item length.

44. **(Previously Presented)** A method of conveying and evaluating a plurality of items having different physical characteristics, said plurality of items including shorter and longer items being correspondingly shorter and longer than a predetermined length, said method comprising the steps of:

making a determination that each of said items is a longer or a shorter item;

assigning a gravity center characteristic to each of said items according to a first or a second criteria, depending on whether said item is observed to be shorter or longer, respectively, such that a longer item is assigned a gravity center characteristic according to a first criteria, and such that a shorter item is assigned a gravity center characteristic according to a second criteria; and

ejecting all of said items from said conveying path, with consideration given to the assigned gravity center when determining where to contact said items for ejection thereof.

45. **(Previously Presented)** A conveying apparatus for evaluating the tilting characteristics of a item as it is conveyed along a conveying path, said apparatus comprising:

a first conveyor including an exit end, said first conveyor configured to convey items off of said first conveyor at a location proximate said exit end;

a second conveyor including an inlet end, said second conveyor configured to accept items onto said second conveyor at a location proximate said inlet end, said inlet end of said second conveyor and said first conveyor defining a gap therebetween;

a tilt roller positioned within said gap, said tilting roller configured such that said item rolls over and tilts over said tilting roller as said item is conveyed from said first conveyor towards said second conveyor, with said item tilting from a position in contact with said first conveyor and said tilting roller to a position in contact with said second conveyor and said tilting roller; and

at least one sensor to sense the tilting of said item as said item tilts over said tilting roller.

46. **(Previously Presented)** The conveying apparatus as claimed in Claim 45, wherein said tilting roller is an idler roller.